

PAEWG-01-11

First Meeting of the Protected Areas and Ecosystems Working Group (PAEWG1)

18-19 March 2019, Yokohama, Japan

Proposal for a Research and Management Plan for the 'FOOLS FLAT' protected area

Relates to agenda item: 4

Working paper Info paper

Delegation of Australia

Abstract

The purpose of this paper is to propose a Research and Management Plan for the Fools Flat protected area, as designated by the SIOFA Meeting of the Parties in June 2018. The proposed research and management plan has been developed based on the Guidance for SC recommendations to the Meeting of the Parties (which is part of the [SIOFA standard protocol for protected areas designation, Annex H SC3 report](#)). It is recommended that the PAEWG1 meeting consider this proposal in the context of the draft framework to design research and management plans for SIOFA Benthic Protected Areas (PAEWG-01-04(XX) and SC-04-06(XX)) and the SIOFA spatial clustering analysis to inform protected area networks (PAEWG-01-04(XX) and SC-04-06(XX)), and potentially use these papers for refinement of this proposal.

Recommendations *(working papers only)*

It is recommended that the SC:

- **Note** that the Fools Flat feature has been designated as a protected area because it meets the following criteria in the SIOFA protected areas designation protocol: 3b. Bioregional representation – The area has a comparatively higher degree of naturalness due to zero or a low level of human-induced disturbance or degradation from, for example, historical fishing activity; 4a. Geographic and/or geomorphological representation - The area provides for important or desirable geographic representation within the SIOFA area; 5b. Biodiversity representation – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity.
 - **Recall** the Guidance for SC Recommendations to the Meeting of the Parties outlined in the standard protocol for protected areas designation (Annex H SC3 report), which states that:
 - *If the proposal documents the necessary data and scientific information to support a protected area using protocol, different measures could be applied, such as management measures, technical measures, closures.*
 - *In case of an area becoming protected, a management and research plan shall be associated to it on the year to come. It will include:*
 - *The measures in place in the protected area;*
 - *The time of review of the protected area;*
 - *If needed, the research that should be undertaken in the area.*
 - **Consider** whether the proposed Research and Management Plan for the Fools Flat Protected Area meets the requirements outlined in the Guidance for SC Recommendations to the Meeting of the Parties (Annex H SC3 report), and if these requirements have been met, **recommend** that the SC recommend to the Meeting of the Parties that the proposed research and management plan be adopted for the Fools Flat protected area.
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Research and management plan for the Fools Flat protected area

Name	Fools Flat												
Geographic description	<p>Coordinates: Latitude 31° 20' S, 94° 55' E and 31° 30' S and 95° 00' E.</p> <p>Area: 585.3 km²</p> <p>Area by depth range:</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Depth (m)</th> <th>Area (km²)</th> </tr> </thead> <tbody> <tr> <td>< 700</td> <td>0</td> </tr> <tr> <td>701 – 1000</td> <td>1.7</td> </tr> <tr> <td>1001 – 1500</td> <td>299.7</td> </tr> <tr> <td>>1500</td> <td>283.9</td> </tr> <tr> <td>Total</td> <td>585.3</td> </tr> </tbody> </table>	Depth (m)	Area (km ²)	< 700	0	701 – 1000	1.7	1001 – 1500	299.7	>1500	283.9	Total	585.3
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Figure 1
General bathymetry of the Fools' Flat Sea floor feature

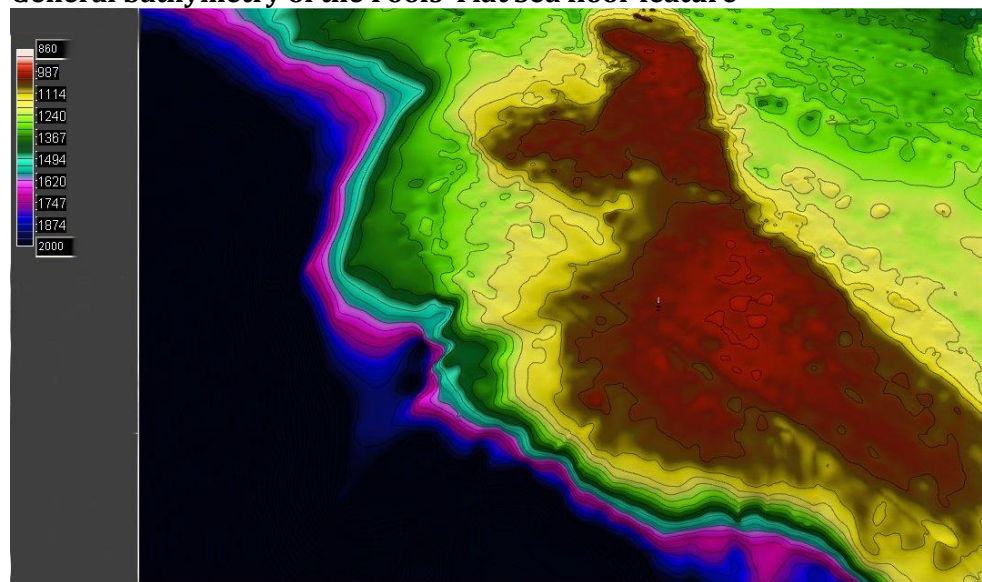
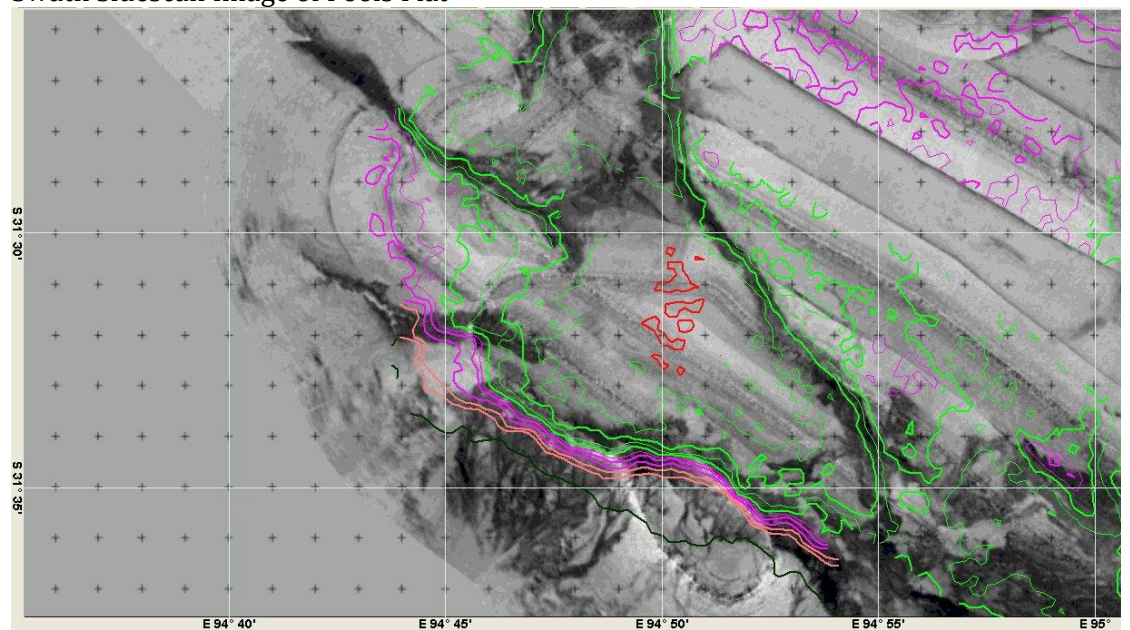


Figure 2
Swath Sidescan Image of Fools Flat



Objectives for this protected area	<p>The objectives for this area are to maintain the value and integrity of the area’s bioregional representation, geographic and/or geomorphological representation and biodiversity representation.</p>
Objectives for this plan	<p>In accordance with the Guidance for SC Recommendations to the Meeting of the Parties outlined in the standard protocol for protected areas designation (Annex H SC3 report), the objectives for this research and management plan are to describe:</p> <ul style="list-style-type: none"> - Management measures in place in the protected area - The time of review of the protected area <p>If needed, the research that should be undertaken in the area.</p>
Criteria that the protected area meets	<p>The area meets the following criteria:</p> <ul style="list-style-type: none"> - <u>3b. Bioregional representation</u> – The area has a comparatively higher degree of naturalness due to zero or a low level of human-induced disturbance or degradation from, for example, historical fishing activity; - <u>4a. Geographic and/or geomorphological representation</u> - The area provides for important or desirable geographic representation within the SIOFA area; - <u>5b. Biodiversity representation</u> – The area is known to contain high diversity of ecosystems, habitats, communities or species, or has higher genetic diversity. <p><u>Feature description and geographical representation</u></p> <p>This region is located on the southern side of Broken Ridge Plateau to the south of the Rusky Knoll feature. This site reportedly has a wide range of benthic habitat types (SIODFA 2016). The seamount shoals to around 990 m; its southern side (the edge of Broken Ridge) drops steeply down to over 4000 metres. Figure 1 shows the bathymetry of this seafloor feature. CBD (2015) notes that the seamount appears to have suitable environmental conditions for the deepwater species of fish that occur in the area. CBD (2015) notes that is believed to be biologically pristine, and its benthos and topography are highly fractured. There are some indications that this feature may have been above sea level at some time in the past (CBD 2015).</p> <p><u>Bioregional and biodiversity representation</u></p> <p>The Fools Flat (central) region is the only part of the entire Broken Ridge that shows substantial coral reefs (FAO 2006). CBD (2015) notes that the extent of this coral habitat is much greater than identified on Coral Seamount in the southwest Indian Ocean, with individual reefs of over 2.5 km² in area, and possibly the largest area of cold-water coral habitat yet identified in any ocean. The unique nature of this region comes from the presence of framework-building scleractinian coral reefs on the shallow southern side of the largest single feature in the Indian Ocean, a 1300km-long ridge (CBD 2015).</p> <p>There are reportedly stands of brain and black coral on the southern rim of the ridge, which have elevations of 20 – 30 m and can be seen with sidescan sonar (Figure 2) (SIODFA 2016). When these have been observed on vessel echo sounders they look like aggregations of fish (but they do not move) – hence the term “Fool’s Flat”. There appears to be strong upwelling over the south-west boundary and this no doubt has resulted in favourable conditions for the growth of deepwater corals (SIODFA 2016).</p> <p>CBD (2015) notes that the main framework-building species appears to be <i>Solenosmilia variabilis</i>. The framework largely comprises dead coral, and these three-dimensional habitats are sensitive to impacts, with slow recovery (Koslow et al. 2000, Rogers et al. 2008, Althaus et al. 2009, FAO 2009, Williams et al. 2010)</p>

	<p>Fools Flat is listed as an Ecologically or Biologically Significant Area (EBSA) by the Convention on Biological Diversity and met the following criteria:</p> <ul style="list-style-type: none"> • Uniqueness or rarity (High ranking) • Special importance for the life-history stages of species (No information) • Importance for threatened, endangered or declining species and/or habitats (No information) • Vulnerability, fragility, sensitivity, or slow recovery (High ranking) • Biological productivity (No information) • Biological diversity (No information) • Naturalness (High ranking). <p><u>Fishing history</u></p> <p>The only trawl shots undertaken here have been on the flat sedimented bottom at around 1000m (SIODFA 2016). At least two fishing vessels are believed to have collected data in the past (SIODFA 2016).</p> <p>It is reported that there has been past fishing by Soviet/Ukrainian vessels across the flats about the Broken Ridge area.</p> <p>CBD (2015) reports that a single bottom trawl shot was carried out on July 8 1997, which landed at 31o 43.54' S, 95 o 13.7'E at 795 m and immediately came fast. A catch of 3.5 tonnes of dead brain coral was taken, which destroyed the net. This identified the type of habitat as coral reef rather than rocky knoll, and no further fishing activity was undertaken on this type of feature.</p> <p><u>Other information to support designation</u></p> <p>Industry members from Australia, the Cook Islands and Japan support the designation of Fools' Flat feature. No trawling by SIODFA vessels is permitted.</p>
<p>Social, cultural and economic interests</p>	<p>Historical fishing data may assist with understanding any social, cultural and/or economic costs associated with designating this as a protected area. It is possible that designation could have adverse social, cultural or economic impacts in terms of forgone opportunity for fishing.</p>
<p>Management measures</p>	<p>In accordance with CMM 2018/01, the following management measures apply:</p> <p><i>35. The areas included in Annex 2 are provisionally designated as protected areas.</i></p> <p><i>36. CCPs shall provisionally apply the following measures in the areas listed on Annex 2 until the adoption of a dedicated research and management plan, referred to in paragraph 6(e), for each area at MoP6:</i></p> <p><i>(a) CCPs shall prohibit all vessels flying their flag from engaging in bottom fishing, excluding line and trap methods; and</i></p> <p><i>(b) For all other gears, CCPs shall ensure each vessel flying their flag has a scientific observer onboard at all times while fishing inside those areas.</i></p> <p><i>37. When the Meeting of the Parties adopts a revised SIOFA protocol for protected area designation after advice from the Scientific Committee arising from its review referred to in paragraph 6(d), the Meeting of the Parties shall also review Annex 2 of this CMM, taking into account advice of the Scientific Committee.</i></p> <p>All other relevant SIOFA CMMs apply within this protected area.</p>

Management needs	<p>SC3 recommended that the MoP consider that fishing with all gears were identified as activities that may degrade the scientific and biodiversity value of the area. According to Goldsworthy (2017), a more thorough analysis of fishing data and direct observation should be undertaken to confirm the asserted minimal impact of past fishing. To ensure the achievement of bioregional representation, a broader study of habitats within the SIOFA Area will also be required at some point in the future.</p> <p>Given that fishing is still permitted within the area, the following management needs have been identified using the draft SIOFA framework for the design of research and management plans for Benthic Protected Areas:</p> <ul style="list-style-type: none"> - FOR PAEWG DISCUSSION
Review periods	<p>Given the compelling justification for closure to fishing using trawl gears, designation should be reviewed at least every 10 years, or more frequently if new information becomes available that enhances or degrades the justification for its designation as a protected area.</p>
Outline of monitoring and/or research needed	<p>The following monitoring and/or research needs have been identified using the draft SIOFA framework for the design of research and management plans for Benthic Protected Areas:</p> <ul style="list-style-type: none"> - FOR PAEWG DISCUSSION - Goldsworthy (2017) noted that a research survey on the vertical distribution, and condition of the deep-water corals and other species and habitats would strengthen knowledge and understanding of the site. More robust oceanographic data, for example of the upwellings over time, would provide additional information concerning the assumed unique habitat. - Goldsworthy (2017) also noted that fishing data should also be provided in more detail, including information on the reports of trawling in the area, and any information on coral bycatch. An analysis of the Russian/Ukrainian fishing data and any other fishing data available would provide confirmation of the assertion that trawl shots have been limited to the flat sedimented bottom. - A desk-top compilation of publications from research undertaken within this area would assist with future reviews of the designation.
Compliance	<p>Compliance-related issues are outside of the remit of the SIOFA SC.</p>

References

Althaus F, Williams A, Schlacher TA, Kloser RJ, Green MA (2009) Impacts of bottom trawling on deep-coral ecosystems of seamounts are long-lasting. *Marine Ecology Progress Series* 397: 279–294.

FAO 2006 Management of Demersal Fisheries Resources of the Southern Indian Ocean. FAO Fisheries Circular No. 1020 FAO Rome 2006.

FAO 2009. International guidelines for the management of deep- sea fisheries in the high seas. FAO Rome 2009.

CBD 2015. Ecologically or Biologically Significant Areas (EBSAs): Fool's Flat, published: 13 Jun 2015, available at <https://chm.cbd.int/database/record?documentID=204021>

Goldsworthy, L 2017, Review of SIODFA Proposed Benthic Protected Areas, Report prepared for the Australian Government Department of Agriculture and Water Resources, Lyn Goldsworthy AM, November 2017.

Koslow, J.A., Hoehlert GW, Gordon JD, Haedrich RL, Lorance P and N Parin. 2000. Continental slope and deep-sea fisheries: implications for a fragile ecosystem. *ICES Journal of Marine Science* 57: 548-557.

Kotlyar, 1980: Classification & distribution of trachichthyid fish from the Indian Ocean. *Trudy Instituta Okeanologii* 110.

Rogers A.D., Clark M.R, Hall-Spencer K.M and Gjerde K.M. (2008). The Science behind the Guidelines: A Scientific Guide to the FAO Draft International Guidelines (December 2007) For the Management of Deep-Sea Fisheries in the High Seas and Examples of How the Guidelines May Be Practically Implemented. IUCN, Switzerland, 2008.

SIODFA 2016, Southern Indian Ocean Deepwater Fisheries Association (SIODFA), Benthic Protected Areas in the Southern Indian Ocean. SIODFA Technical Report XVII 16/01. 40 pp

Williams A, Schlacher TA, Rowden AA, Althaus F, Clark MR, et al. (2010) Seamount megabenthic assemblages fail to recover from trawling impacts. *Marine Ecology* 31(S1): 183–199.